

response is due on or before July 16, 2003. A check in the amount of \$930.00, in payment of the fee required under 37 C.F.R. § 1.17(a)(3), is filed concurrently herewith.

Kindly amend the application as follows:

IN THE CLAIMS

Please cancel claims 37, 39, 52 and 53, without prejudice.

Please amend claims 38, 40-42, 45, 46 and 48-51 as follows<sup>1</sup>:

38. (Amended) A recombinant DNA molecule comprising the portion of a DNA sequence selected from the group consisting of the following subcloned fragments that hybridizes to at least one of the DNA inserts of Z-pBR322 (Pst)/HcIF-II-206 and Z-pBR322 (Pst)/HcIF-SN35-AHL6:

HchrIF-A, the subcloned HindIII fragment of chr 3 in E.coli HB101;

HchrIF-B, the subcloned EcoRI fragment of chr 12 in E.coli HB101;

HchrIF-C, the subcloned HindIII fragment of chr 12 in E.coli HB101;

HchrIF-D, the subcloned EcoRI fragment of chr 13 in E.coli HB101;

HchrIF-E, the subcloned EcoRI fragment of chr 23 in E.coli HB101;

HchrIF-F, the subcloned HindIII fragment of chr 23 in E.coli HB101;

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<sup>1</sup> Applicant has attached hereto an Appendix of Amendments as Exhibit A that shows the amendments to the claims in the underline and bracket format. For the Examiner's convenience, applicant has also attached a copy of the pending claims (38, 40-51 and 54-56) after entry of this Amendment as Exhibit B.

HchrIF-G, the subcloned EcoRI fragment of chr 26 in E.coli HB101; and

HchrIF-H, the subcloned HindIII fragment of chr 26 in E.coli HB101.

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40. (Amended) A recombinant DNA molecule comprising a DNA sequence selected from the group consisting of DNA sequences of the formula:

TTACTGGTGGCCCTCCTGGTGCTCAGCTGCAAGTCAAGCTGCTCTGTGGGCTGTGAT  
CTGCCTCAAACCCACAGCCTGGGTAGCAGGAGGACCTTGATGCTCCTGGCACAGATG  
AGGAGAATCTCTCTTTTCTCCTGCTTGAAGGACAGACATGACTTTGGATTTCCCCAG  
GAGGAGTTTGGCAACCAGTTCCAAAAGGCTGAAACCATCCCTGTCCTCCATGAGATG  
ATCCAGCAGATCTTCAATCTCTTCAGCACAAAGGACTCATCTGCTGCTTGGGATGAG  
ACCCTCCTAGACAAATTCTACACTGAACTCTACCAGCAGCTGAATGACCTGGAAGCC  
TGTGTGATACAGGGGGTGGGGGTGACAGAGACTCCCCTGATGAAGGAGGACTCCATT  
CTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTCTATCTGAAAGAGAAGAAATAC  
AGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATCATGAGATCTTTTTCTTTGTCA  
ACAAACTTGCAAGAAAGTTTAAGAAGTAAGGAA

and

TGTGATCTGCCTCAAACCCACAGCCTGGGTAGCAGGAGGACCTTGATGCTCCTGGCA  
CAGATGAGGAGAATCTCTCTTTTCTCCTGCTTGAAGGACAGACATGACTTTGGATTT  
CCCCAGGAGGAGTTTGGCAACCAGTTCCAAAAGGCTGAAACCATCCCTGTCCTCCAT  
GAGATGATCCAGCAGATCTTCAATCTCTTCAGCACAAAGGACTCATCTGCTGCTTGG  
GATGAGACCCTCCTAGACAAATTCTACACTGAACTCTACCAGCAGCTGAATGACCTG  
GAAGCCTGTGTGATACAGGGGGTGGGGGTGACAGAGACTCCCCTGATGAAGGAGGAC  
TCCATTCTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTCTATCTGAAAGAGAAG

AAATACAGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATCATGAGATCTTTTTCT  
TTGTCAACAACTTGCAAGAAAGTTTAAGAAGTAAGGAA.

41. (Amended) A recombinant DNA molecule comprising a DNA sequence  
selected from the group consisting of DNA sequences of the formula:

ATGGCCCTGTCCTTTTCTTTACTGATGGCCGTGCTGGTGCTCAGCTACAAATCCATC  
TGTTCTCTGGGCTGTGATCTGCCTCAGACCCACAGCCTGGGTAATAGGAGGACCTTG  
ATACTCCTGCAACAAATGGGAAGAATCTCTCATTCTCCTGCCTGAAGGACAGACAT  
GATTTTCGGATTCCCCGAGGAGGAGTTTGATGGCCACCAGTTCAGAAGACTCAAGCC  
ATCTCTGTCCTCCATGAGATGATCCAGCAGACCTTCAATCTCTTCAGCACAGAGGAC  
TCATCTGCTGCTTGGGAACAGAGCCTCCTAGAAAAATTTTCCACTGAACTTTACCAG  
CAACTGAATGACCTGGAAGCATGTGTGATACAGGAGGTTGGGGTGGGAAGAGACTCCC  
CTGATGAATGTGGACTCCATCCTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTT  
TATCTAACAGAGAAGAAATACAGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATC  
ATGAGATCCCTCTCGTTTTCAACAACTTGCAAAAAAGATTAAGGAGGAAGGAT

and

TGTGATCTGCCTCAGACCCACAGCCTGGGTAATAGGAGGACCTTGATACTCCTGCAA  
CAAATGGGAAGAATCTCTCATTCTCCTGCCTGAAGGACAGACATGATTTTCGGATT  
CCCGAGGAGGAGTTTGATGGCCACCAGTTCAGAAGACTCAAGCCATCTCTGTCCTC  
CATGAGATGATCCAGCAGACCTTCAATCTCTTCAGCACAGAGGACTCATCTGCTGCT  
TGGGAACAGAGCCTCCTAGAAAAATTTTCCACTGAACTTTACCAGCAACTGAATGAC  
CTGGAAGCATGTGTGATACAGGAGGTTGGGGTGGGAAGAGACTCCCCTGATGAATGTG  
GACTCCATCCTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTTTATCTAACAGAG

AAGAAATACAGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATCATGAGATCCCTC  
TCGTTTTCAACAAACTTGCAAAAAAGATTAAGGAGGAAGGAT.

42. (Amended) The recombinant DNA molecule according to any one of claims 38, 40 and 41, wherein said DNA sequence is operatively linked to an expression control sequence.

45. (Amended) A recombinant DNA molecule selected from the group consisting of C8-IFN- $\alpha$ 2, LAC-AUG( $\alpha$ 2) and  $\beta$ -lac-AUG( $\alpha$ 2).

46. (Amended) A host cell transformed with at least one recombinant DNA molecule according to any one of claims 38 and 40-45.

48. (Amended) A transformed host cell, wherein said host cell is E.coli HB101(Z-pBR322(Pst)/HcIF-II-206).

49. (Amended) A transformed host cell selected from the group consisting of HchrIF-A, wherein HchrIF-A is the subcloned HindIII fragment of chr 3 in E.coli HB101; HchrIF-B, wherein HchrIF-B is the subcloned EcoRI fragment of chr 12 in E.coli HB101; HchrIF-C, wherein HchrIF-C is the subcloned HindIII fragment of chr 12 in E.coli HB101; HchrIF-D, wherein HchrIF-D is the subcloned EcoRI fragment of chr 13 in E.coli HB101; HchrIF-E, wherein HchrIF-E is the subcloned EcoRI fragment of chr 23 in E.coli HB101; HchrIF-F, wherein HchrIF-F is the subcloned HindIII fragment of chr 23 in E.coli HB101;

HchrIF-G, wherein HchrIF-G is the subcloned EcoRI fragment of chr 26 in E.coli HB101; and HchrIF-H, wherein HchrIF-H is the subcloned HindIII fragment of chr 26 in E.coli HB101.

50. (Amended) A transformed host cell selected from the group consisting of E.coli DS410 (C8-IFN- $\alpha$ 2), E.coli DS410 (LAC-AUG( $\alpha$ 2)) and E.coli DS410 HB101 ( $\beta$ lac-AUG( $\alpha$ 2)).

51. (Amended) A method for producing a recombinant DNA molecule comprising a DNA sequence selected from the group consisting of DNA sequences of the formula:

TTACTGGTGGCCCTCCTGGTGCTCAGCTGCAAGTCAAGCTGCTCTGTGGGCTGTGAT /  
CTGCCTCAAACCCACAGCCTGGGTAGCAGGAGGACCTTGATGCTCCTGGCACAGATG /  
AGGAGAATCTCTCTTTTCTCCTGCTTGAAGGACAGACATGACTTTGGATTTCCTCCAG /  
GAGGAGTTTGGCAACCAGTTCCAAAAGGCTGAAACCATCCCTGTCCTCCATGAGATG /  
ATCCAGCAGATCTTCAATCTCTTCAGCACAAAGGACTCATCTGCTGCTTGGGATGAG /  
ACCCTCCTAGACAAATTCTACACTGAACTCTACCAGCAGCTGAATGACCTGGAAGCC /  
TGTGTGATACAGGGGGTGGGGGTGACAGAGACTCCCCTGATGAAGGAGGACTCCATT /  
CTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTCTATCTGAAAGAGAAGAAATAC /  
AGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATCATGAGATCTTTTCTTTGTCA /  
ACAAACTTGCAAGAAAGTTTAAGAAGTAAGGAA; /

TGTGATCTGCCTCAAACCCACAGCCTGGGTAGCAGGAGGACCTTGATGCTCCTGGCA /  
CAGATGAGGAGAATCTCTCTTTTCTCCTGCTTGAAGGACAGACATGACTTTGGATT /

CCCCAGGAGGAGTTTGGCAACCAGTTCCAAAAGGCTGAAACCATCCCTGTCCTCCAT /  
GAGATGATCCAGCAGATCTTCAATCTCTTCAGCACAAAGGACTCATCTGCTGCTTGG /  
GATGAGACCCTCCTAGACAAATTCTACACTGAACTCTACCAGCAGCTGAATGACCTG /  
GAAGCCTGTGTGATACAGGGGGTGGGGGTGACAGAGACTCCCCTGATGAAGGAGGAC /  
TCCATTCTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTCTATCTGAAAGAGAAG /  
AAATACAGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATCATGAGATCTTTTCT /  
TTGTCAACAACTTGCAAGAAAGTTTAAGAAGTAAGGAA; /

D4  
ATGGCCCTGTCCTTTTCTTTACTGATGGCCGTGCTGGTGCTCAGCTACAAATCCATC /  
TGTTCTCTGGGCTGTGATCTGCCTCAGACCCACAGCCTGGGTAATAGGAGGACCTTG /  
ATACTCCTGCAACAAATGGGAAGAATCTCTCATTCTCCTGCCTGAAGGACAGACAT /  
GATTTTCGGATTCCCCGAGGAGGAGTTTGATGGCCACCAGTTCCAGAAGACTCAAGCC /  
ATCTCTGTCCTCCATGAGATGATCCAGCAGACCTTCAATCTCTTCAGCACAGAGGAC /  
TCATCTGCTGCTTGGGAACAGAGCCTCCTAGAAAAATTTTCCACTGAACTTTACCAG /  
CAACTGAATGACCTGGAAGCATGTGTGATACAGGAGGTTGGGGTGGGAAGAGACTCCC /  
CTGATGAATGTGGACTCCATCCTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTT /  
TATCTAACAGAGAAGAAATACAGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATC /  
ATGAGATCCCTCTCGTTTTCAACAACTTGCAAAAAAGATTAAGGAGGAAGGAT; /

and

TGTGATCTGCCTCAGACCCACAGCCTGGGTAATAGGAGGACCTTGATACTCCTGCAA /  
CAAATGGGAAGAATCTCTCATTCTCCTGCCTGAAGGACAGACATGATTTTCGGATTC /

04  
CCCGAGGAGGAGTTTGATGGCCACCAGTTCAGAAAGACTCAAGCCATCTCTGTCCTC /  
CATGAGATGATCCAGCAGACCTTCAATCTCTTCAGCACAGAGGACTCATCTGCTGCT /  
TGGGAACAGAGCCTCCTAGAAAAATTTCCACTGAACTTTACCAGCAACTGAATGAC /  
CTGGAAGCATGTGTGATACAGGAGGTTGGGGTGGAAGAGACTCCCCTGATGAATGTG /  
GACTCCATCCTGGCTGTGAGGAAATACTTCCAAAGAATCACTCTTTATCTAACAGAG /  
AAGAAATACAGCCCTTGTGCCTGGGAGGTTGTCAGAGCAGAAATCATGAGATCCCTC /  
TCGTTTTCAACAAACTTGCAAAAAAGATTAAGGAGGAAGGAT, /

comprising the step of culturing a host cell containing at least one recombinant DNA molecule of claim 40 or 41 under conditions in which the host cell replicates the recombinant DNA molecule.

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Please add the following claim:

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56. (Added) A method for producing a DNA molecule comprising a DNA sequence encoding an  $\alpha$ -type interferon comprising the step of culturing a host cell containing a DNA molecule comprising the DNA sequence of claim 54 or 55 under conditions in which the host cell replicates the DNA molecule.

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### REMARKS

Applicant acknowledges with appreciation the Examiner's allowance of claims 53-55.

Applicant has cancelled claims 37, 39 and 52-53, without prejudice, and reserves the right to prosecute the subject matter of the cancelled claims in any future application